

Contact: Paul Mehney, TARDEC, 586-770-3438
Ashley John, TARDEC, 586-405-5570

ARMY TESTS REMOTE WARFARE FOR FUTURE SYSTEMS

WARREN, Mich. – Monday, August 14, 2006 – Experiments dubbed RUX06, focused on Soldier workload and performance exercises, demonstrated how well a Soldier can operate on the battlefield while remotely controlling an unmanned vehicle platform, planning missions while reacting to a changing combat zone, and scanning the local area for awareness and security.

The U.S. Army Research Development and Engineering Command's (RDECOM) Tank Automotive Research, Development and Engineering Center (TARDEC), Army Research Laboratory (ARL), and Aviation and Missile Research, Development and Engineering Center (AMRDEC) and the Army's Unit of Action Maneuver Battle Lab (UAMBL) measured how various unmanned vehicle Science and Technology (S&T) efforts enhance Soldier capabilities for Future Combat Systems during a six week experiment, which just concluded, at Fort Knox, Ky.

"RUX06 gave us [Army] an opportunity to see how computer automated tools are poised to assist with tasks that are conventionally performed by Soldiers," stated Lt. Col. John Janiszewski, Chief of Experimentation and Analysis Directorate, UAMBL. "It's important that our Soldiers become capable of using unmanned vehicles efficiently because their use means fewer Soldiers being exposed to dangers of the battlefield."

The data collected during RUX06 allowed the Army to quantify tangible information on the effects of advanced crew station and unmanned robotic systems technologies on Soldier performance.

"These experiments helped determine what effects automated tasks and remote-control of unmanned vehicles will have on Soldier performance," added Patrick Nunez, TARDEC research scientist and RUX06 test manager. "The experiments will allow us [Army] to better refine our technologies and procedures for unmanned assets."



RUX06 was centered on two key metrics: autonomous mobility and Crew Aiding Behaviors (CABS). CABS is simply software that automates common tasks such as route planning and the selection of observation and fire positions. The experiments showed that the use of automated software in the TARDEC-ARL crew station significantly reduced threat engagement time and improved the way the Soldier controls the robot.

TARDEC's Robotic Follower autonomous mobility metrics – robotic system control and autopilot-mode of an unmanned asset – are being evaluated by UAMBL to see how well that Soldier performs while completing a multitude of tasks.

-MORE-

6501 E. 11 Mile Rd.
AMSRD-TAR
Warren MI, 48397

PH: 586-574-6675
<http://tardec.army.mil>

“We are intentionally overloading the Soldier,” stated Janiszewski. “We want to see how many tasks they can handle without interfering with their performance in a combat situation.”

When multiple targets are spotted, the crew station’s automated technology prioritizes the enemies and tells the Soldier which weapon would be most effective to defeat the threat. After the threat is destroyed, the next priority threat moves to the top of the screen for disengagement.

TARDEC’s touch-screen crew stations allow the Soldier to create behaviors to maximize efficiency in choosing enemy targets. Forward robots detect enemy positions and present targets to the Soldier via situational awareness maps. The crew station takes in the information, prioritizes it and recommends a weapon to engage the target. This entire task is completed while the Soldier is simultaneously controlling the follow-vehicle and searching the screens for “red-force” enemies (Local Area Awareness).

“The crew station vehicles have given me better visualization of the Battlefield,” commented Sgt. 1st Class Jeremy Dose, a Soldier who operated and tested the vehicles. “The best part is that my workload hasn’t increased very much and now I am keeping myself and other Soldiers out of enemy fire.”

The Soldier uses the crew station to give the follower vehicle a manually-specific path, but gives the operator the option to use automated planning tools to automatically create the follower route.

“This experiment is validating seven years of robotic follower and crew station technology research,” stated Nunez. “We are trying to make it easier for the Soldier to operate manned and unmanned assets simultaneously, while reducing the number of Soldiers inside the vehicle.”

“Remote warfare technologies could reach the hands of the Soldier as early as 2008,” stated Janiszewski. “The Army has developed a baseline of technologies for future systems that have the potential to be spun-out onto current military platforms.”



TARDEC’s next steps will be focused on integrating and improving Soldier-robot interaction. “We need to find ways to improve how the Soldier communicates with unmanned assets,” added Nunez. “We want to be able to let the Soldiers know what the robot is thinking.”

TARDEC, part of the U.S. Army Research, Development and Engineering Command (RDECOM), is headquartered at the Detroit Arsenal, Warren, Mich. It is the Nation’s laboratory for advanced military automotive technology. TARDEC’s mission is to research, develop, engineer, leverage and integrate advanced technology into ground systems and support equipment throughout the life cycle. Its technical staff leads research in ground vehicle survivability, mobility, intelligent systems, and maneuver support and sustainment.

###

6501 E. 11 Mile Rd.
AMSRD-TAR
Warren MI, 48397

PH: 586-574-6675
<http://tardec.army.mil>